

SUMMARY OF CASE OF [REDACTED]

[REDACTED] was employed by Orange State Oil Company in maintenance work, and in this capacity, he, with others, was engaged in making certain alterations in pipe line connections and in cleaning out the corresponding gasoline storage tanks at a number of terminals of Orange State Oil Company. During the period of December 6th to 12th he was at Tampa and at this point a large storage tank was cleaned. This tank, on subsequent investigation, was found to have been used for mixing leaded gasoline in January of 1934, and had not been cleaned since. The mixing operations consisted in the introduction of anti-knock Fluid into a gasoline stream entering the tank, instead of filling the tank with gasoline already mixed with Fluid at a regular mixing point. Under these conditions of mixing, it may happen that the Fluid separates out, to some degree, and lies under the water layer at the bottom of a tank for an indefinite period, or until the tank is cleaned out. Some degree of such separation evidently occurred in this case, for the examination of some of the sludge removed in cleaning (obtained subsequently from a pit in which it had dried out almost entirely) disclosed the presence of 0.085% of organic lead, and 1.6% total lead. The tank which was cleaned, and from which this sludge sample was derived, was the only one at this site which had been used for the direct mixing of leaded gasoline. It, therefore, can be convicted of giving rise to the serious lead exposure subsequently revealed in the illness and death of [REDACTED]. Moreover, a review of Hubbard's work

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from December 1st onward, shows that no other opportunities for significant occupational lead exposure occurred. Some days after completing the job of cleaning the above tank, [REDACTED] became ill, and to abbreviate the clinical history, which is available in part in his hospital record, his illness developed in severity and followed the characteristic course of a fatal case of organic lead intoxication. The necropsy findings were compatible with the clinical diagnosis above, and in fact, except for certain unrelated chronic lesions, resembled those described in certain previous fatal cases of lead poisoning. The terminal broncho-pneumonia, for example, has been described in such cases before, (Morris and Gettler, J.A.M.A. 85: 818, (1925)).

Certain tissues were available for analysis and were sent by Dr. L. Y. Dyrenforth, Pathologist at St. Luke's Hospital of Jacksonville, to the Kettering Laboratory of Applied Physiology at the College of Medicine of the University of Cincinnati. These with the results of analysis, are listed below, and are compared with the average results obtained by this laboratory on normal persons, as well as those obtained in a previous fatal case of tetraethyl lead poisoning.

<u>Description of Tissue</u>	<u>Lead in Milligrams per 100 Grams</u>		
	<u>Hubbard</u>	<u>Previous Case</u>	<u>Normal Persons</u>
Liver	2.00	2.40	0.130
Kidney	0.64	1.31	0.027
Brain	1.08	0.85	0.013
Lung	0.45	0.48	0.028

Certain possibilities for the chance contamination of the tissues before receipt at this laboratory were investigated. Samples of the embalming fluids used for embalming the body before the necropsy, and a sample of the formalin in which the tissues had been preserved by the pathologist, were analyzed for their lead content. Only traces of lead were found in these materials. Also the containers used by the pathologist for the preservation of the tissues were examined and found satisfactory. The above analyses may be accepted, therefore, as evidence of the facts as to the lead content of the tissues of Hubbard at the time of his death.

In summary, the source and significance of the lead exposure of the deceased have been demonstrated, the onset and clinical course of his illness were typical of acute organic lead poisoning as previously seen and described in medical literature (Kehoe, J.A.M.A. 85: 108, (1925); Machle, J.A.M.A. 105: 578, (1935)), the necropsy findings were compatible with the diagnosis of tetraethyl lead poisoning, and the analytical results obtained on the tissues have revealed the presence of quantities of lead sufficient to cause death.

Signed:

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